

GLAST Project **Configuration Control Board (CCB) Minutes**

A GLAST Project CCB Meeting was held on Thursday, January 23, 2003, at 3:00 p.m., in Building 16, Room 8A, SEU Program Office Conference Room.

CCB No.: CCB-012

List of Attendees:

Al Vernacchio, Mark Seidleck, John Deily, Norman Rioux, Joy Bretthauer (telecon), Bernie Graf, Bill Browne, Art Whipple, Erik Andrews and Jim Chipouras.

The Following CCRs were discussed and dispositioned:

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0077	Clarification of CDRL 29: Observatory Detailed Requirements, Traceability and Verification"	Joy Bretthauer

Disposition: *Approved with Changes.* The purpose of this CCR is clarify CDRL 29 and clearly remove any implied responsibility for having the spacecraft contractor be responsible for the flowdown & documentation of the instrument performance requirements for CDRL 29.

The CCB agreed to modify the CCR as follows:

Change CDRL 29 title from "Observatory Detailed Requirements Document" to "Observatory Detailed Requirements, Traceability and Verification".

Change the third sentence in the second paragraph of the "Preparation Information " section of CDRL 29 as follows:

"The top-down traceability of observatory requirements shall extend to the instruments ~~through~~ by identifying which requirements shall extend to the instruments ~~through~~ and identifying which requirements and aspects of requirements are owned wholly by the instrument providers."

Actions items:

The CMO will update CCR 433-0077 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the Spacecraft CDRL (433-CDRL-0002).

Note: As part of this change, the Spacecraft CDRL (433-CDRL-0002) will be reformatted to be consistent with CM procedures.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0078	SC-LAT IRD –Interface Definition Updates	Erik Andrews

Disposition: *Approved with Changes.* The purpose of this CCR is to incorporate modifications/clarifications to the LAT and Spacecraft Bus interfaces.

The CCB agreed to modify the CCR as follows:

Remove “TBR” in section 3.2.5.4.7:

“3.2.5.4.7 CCSDS Packet Synchronization Marker

Each CCSDS Source Packet shall have a 32-bit ~~(TBR)~~ sync pattern pre-pended to the packet.

Note: This sync pattern facilitates subsequent data packet reconstruction.”

Actions items:

The CMO will update CCR 433-0078 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the LAT-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0089	Telecommand Rate to LAT	Erik Andrews

Disposition: *Approved as Submitted.* The purpose of this CCR is to change the LAT real-time command frequency.

Actions items:

The CMO will obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the LAT-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0079	PPS Signal Drift	Bill Browne

Disposition: *Approved with Changes.* The purpose of this CCR is to remove the second option for the PPS signal drift since the SC contractor has elected to meet the requirement identified in the first option. The CCB agreed to correct a typo in the CCR by adding a period at the end of the sentence in section 3.2.5.2.3.

Actions items:

The CMO will update CCR 433-0079 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0080	8 Bit Data Bus, Clock, Valid	Bill Browne

Disposition: *Approved with Changes.* The purpose of this CCR is to change the GBM-SC IRD since the SC has selected an 8 bit bus and the GBM will not receive a Data-Receive ready signal from the SC.

The CCB agreed to modify the CCR to change references from “IEE-1335 and IEE-1394” to “IEEE-1335 and IEEE-1394” in the note under section 3.2.5.4.1.1.

Actions items:

The CMO will update CCR 433-0080 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0081	Digital Control Signals/Monitor Ports	Bill Browne

Disposition: *Deferred.* The purpose of this CCR is to change the GBM-SC IRD to reflect the latest GBM instrument discrete control signals/monitor ports requirements.

Actions items:

The CCB deferred this CCR with an action to Bill Browne to obtain a clearer response from MSFC on whether this is for “8 primary and 8 redundant” or “4 primary and 4 redundant”.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0082	Detector Reference Reflector Surfaces	Bill Browne

Disposition: *Approved with Changes.* The purpose of this CCR is to include the detector reference reflective surfaces requirement in the GBM-SC IRD.

The CCB agreed to modify the proposed “TO:” wording of section 3.2.2.7.1 in the CCR as follows:

Original TO:

“Each GBM detector shall have a reference reflector surface to define the crystal axis normal vector.”

Revised TO:

“Each GBM detector shall have a reference reflector surface normal vector for use in defining the alignment of the crystal axis.”

Actions items:

The CMO will update CCR 433-0082 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0083	BGO Detector 3-Point Interface	Bill Browne

Disposition: *Withdrawn.* The purpose of this CCR is to change the Preliminary BGO Detector Envelope to show a 3-point interface.

Actions items:

The CCR sponsor requested to withdraw the CCR. The CCB concurred with the sponsor to withdraw this CCR. The sponsor will submit a new CCR to include the requirement for the 3-point interface.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0084	LVDS Interface Redundancy (Study #1)	Bill Browne

Disposition: *Approved as Submitted.* The purpose of this CCR is to add a Science Data Interface Redundancy section to the GBM-SC IRD.

Actions items:

The CMO will obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0085	LVDS Timing Data Bus (see Study #3)	Bill Browne

Disposition: *Approved with Changes.* The purpose of this CCR is to specify an LVDS interface. The CCB agreed to modify the CCR Problem statement to correct the following typo: From: "RS-43522" To: "RS422".

Actions items:

The CMO will update CCR 433-0085 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0086	Science Data Stream Sync Marker (see Study 5)	Bill Browne

Disposition: *Approved with Changes.* The purpose of this CCR is to add a Science Data Stream Synchronization Marker.

The CCB agreed to modify the CCR as follows:

Remove "TBR" in section 3.2.5.4.5:

"3.2.5.4.5 CCSDS Packet Synchronization Marker

Each CCSDS Source Packet shall have a 32-bit (~~TBR~~) sync pattern pre-pended to the packet.

Note: This sync pattern facilitates subsequent data packet reconstruction."

Actions items:

The CMO will update CCR 433-0086 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0087	LVDS GBM to LAT Trigger Signal	Bill Browne
Disposition: <i>Approved as Submitted.</i> The purpose of this CCR is to change from an RS-422 to a LVDS GBM to LAT trigger signal.		

Actions items:

The CMO will obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

Bill Browne was given an action to submit a new CCR to add a section to the GBM-SC IRD stating that the Immediate LAT Trigger LVDS interface shall provide cross-strapping redundancy between the GBM and the LAT.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0090	Temperature Sensors	Bill Browne
Disposition: <i>Approved as Submitted.</i> The purpose of this CCR is to specify that GBM will provide and mount temperature sensors to each of the 16 PMTs.		

Actions items:

The CMO will obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0091	GBM Command Frequency	Bill Browne
Disposition: <i>Approved with Changes.</i> The purpose of this CCR is to increase the GBM command frequency.		

The CCB originally deferred this CCR with an action to Bill Browne to have MSFC identify the difference between "command" and "auxiliary command" and determine if this additional information is needed.

Subsequent to the CCB meeting, MSFC agreed to remove "of which 13 can be commands with 7 ancillary telecommands" since it is covered in existing 1553 documentation at MSFC.

Bill Browne provided the following changes to the CCR as agreed by MSFC and approved by the GLAST CCB Chairman:

3.2.6.1.2 GBM Command Frequency

The SC shall transmit commands to the GBM at a maximum rate of 20 telecommands per second. ~~of which 13 can be commands with 7 ancillary telecommands.~~

Actions items:

The CMO will update CCR 433-0091 with the approved changes, obtain CCR approval signature from the GLAST Project Manager on the CCR form and incorporate the approved changes to the GBM-SC IRD.

<u>CCR No.</u>	<u>Subject</u>	<u>Sponsor</u>
433-0092	GBM Protoflight Harness	Bill Browne

Disposition: *Deferred.* The purpose of this CCR is to provide details for the GBM protoflight harnesses requirements.

Actions items:

The CCB deferred this CCR with an action to Bill Browne, Art Whipple and Erik Andrews to further discuss this change with MSFC and generate a revised CCR with new wording.

Minutes approved by:

Original Signed _____ Date 2/20/03 _____

AL Vernacchio
GLAST Deputy Project Manager
(GLAST Project CCB Chairperson)

Minutes prepared by: Jim Chipouras, GLAST Project Configuration Management Office